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Secretary, FCC

Before the
Federal Communications Commission
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
Improving Public Safety Communications in the 800 MHz Band	)	
	)	WT Docket No. 02-55
Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels	)	

To: The Commission

REPLY COMMENTS OF
NEC AMERICA, INC.

NEC America, Inc. ("NEC") 1/ hereby submits reply comments in response to the Notice of Proposed Rulemaking (the "NPRM") released by the Federal Communications Commission (the "Commission") on March 15, 2002 in the above-captioned proceeding. 2/ In the NPRM, the Commission sought comment on the suitability of using the 1910 – 1930 MHz band as replacement spectrum for cellular-type digital SMR ("SMR") licensees relocating from the 800 MHz band and

1/ NEC develops, manufactures and markets a complete line of advanced communications products and software for public and private networks, including Private Branch Exchange ("PBX") systems and key telephone systems that incorporate an integrated wireless component using UPCS spectrum.

2/ *Improving Public Safety Communications in the 800 MHz Band, Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels*, WT Docket No. 02-55, Notice of Proposed Rulemaking, FCC 02-81(March 15, 2002); Order Extending Time for Filing of Reply Comments, WT Docket 02-55, DA 02-1523 (June 27, 2002).

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whether, assuming such a relocation, existing unlicensed PCS ("UPCS") operations in the 1910-1930 MHz band could continue. 3/

The overwhelming majority of commenters that have addressed this narrow issue oppose use of the 1910 – 1930 MHz band as replacement spectrum for SMR licensees relocating from the 800 MHz band and recognize that UPCS cannot coexist with high-powered operations in the band. 4/ These commenters emphasize that UPCS in the band is flourishing. They also overwhelmingly agree that reallocation would disrupt UPCS end users and potentially decimate the UPCS industry. 5/ They also agree that, in addition to UPCS vendors, PCS licenses operating below 1910 MHz would be negatively affected by reallocation of the 1910-1930 MHz band for SMR. Like the majority of commenters that have addressed the issue, NEC is convinced that the 1910 – 1930 MHz band is technically unsuited for SMR or other high-powered services. The Commission would achieve greater spectrum efficiency by permitting isochronous operations in 1910 – 1920 MHz and granting, with some modifications, the UTStarcom petition.

3/ NPRM at ¶¶ 50-52.

4/ *See, e.g.*, Avaya Comments at 2; Boeing Comments at 7; Cinergy Comments at 53; Delmarva Power & Light Comments at 43; Entergy Comments at 47; UTAM Comments at 2; UTStarcom Comments at 1.

5/ *See* Avaya Comments at 3-5, 8-9; NEC Comments at 2-4; UTAM Comments at 8-10, 11-12.

I. UPCS Is Flourishing and Reallocation of the 1910 –1930 MHz Band Would Disrupt Users, Including Public Safety, and Require Excessive Relocation Costs

NEC's wireless PBX product line offers customers an integrated solution for their on-site communications needs. By deploying picocells served by individual groups of transceivers, NEC's solution provides continuous coverage throughout a multi-storied building or across a multi-building campus. Such continuous coverage permits users to travel freely around the workplace while on a call without encountering "dead zones." NEC and other UPCS vendors have invested substantial resources and time into developing the necessary technologies, features, and procedures unique to this band. 6/ Reallocation of the 1910 – 1930 MHz band for SMR and relocation of SMR into the band would thus come as a serious and potentially fatal blow to these UPCS vendors. 7/

Relocation of SMR licensees to the 1910 –1930 MHz band is tantamount to a relocation of UPCS users because the listen-before-talk spectrum etiquette required by the Commission's rules for UPCS ensures that any interference from other operations would effectively silence the UPCS systems. Even Nextel, the only commenter out of over 200 commenters to suggest that the UPCS band might provide suitable replacement spectrum for SMR, recognizes that relocation of SMR to 1910 – 1930 MHz might not in fact prove workable, and that SMR cannot coexist with existing users. Nextel proposes reallocating spectrum from 1910 – 1915 MHz

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6/ Avaya Comments at 5; UTAM Comments at 2-3, 5.

7/ Avaya Comments at 6.

and pairing it with reallocated MSS spectrum at 1990 – 1995 MHz. 8/ Nextel specifically states, however, that the UPCS spectrum only "*may* provide suitable spectrum *provided that* the spectrum *is or can be cleared* of other uses." 9/

When considering possible reallocations and associated relocations, the Commission must choose alternatives that will minimize both the disruption of service to existing users and the economic impact on incumbent licensees. 10/ Nextel's comments do not consider the disruptive and potentially disastrous consequences of relocating UPCS from the 1910 – 1930 MHz band. UPCS customers represent a wide range of groups and industries, including healthcare/public safety, retail, hospitality and warehouse environments, state and local governments, universities and nuclear power plants, to name a few. 11/ As Avaya and UTAM assert in their comments, the hundreds of thousands of end users who rely on UPCS products have invested significant resources in UPCS systems

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8/ Nextel Comments at 51.

9/ *Id.*

10/ *See, e.g., Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies*, Third Report and Order and Memorandum Opinion and Order, 8 FCC Rcd 6589, 6589, ¶ 1 (1993) (adopting plan that will "prevent disruption to existing" operations and "minimize the economic impact on existing licensees") (hereinafter "*Emerging Technologies Third Report and Order*"); *Redesignation of the 17.7-19.7 GHz Frequency Band*, Report and Order, 15 FCC Rcd 13430, 13460-13461, ¶ 63 (2000) ("recognizing the importance of providing continuity of service to the public" and need to "reasonably protect investments in existing . . . operations"); *Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by Mobile-Satellite Service*, Memorandum Opinion and Order and Third Notice of Proposed Rule Making and Order, 13 FCC Rcd 23949, 23961, ¶ 28 (1998) ("we must minimize disruption and down time").

11/ *See, e.g.*, Avaya Comments at 5; NEC Comments at 2; UTAM Comments at 8-

and cannot be expected to disrupt their communications systems to install substitute systems that operate on alternative frequencies. 12/ In many cases, UPCS users will be unable to install substitute systems without incurring extremely high costs or experiencing intolerable – and in some cases, potentially life-threatening – service delays. 13/

The commenters also agree that if, despite the obvious hazards, the Commission chooses to reallocate the 1910 – 1930 MHz band for SMR, the Commission will be required to ensure reimbursement for relocated UPCS industry members pursuant to the relocation compensation policies established in the *Emerging Technologies* docket. 14/ When relocating incumbent spectrum users under its *Emerging Technologies* policy, the Commission has taken steps to ensure that the incumbent users were reaccommodated "in a manner that [was] advantageous to [their existing operations], [did] not disrupt [their] communications services, and foster[ed] introduction of new services and devices." 15/ If the Commission continued to adhere to this approach in relocating UPCS, such a

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12/ Avaya Comments at 6-7; UTAM Comments at 7-8, 10.

13/ Avaya Comments at 6-7; UTAM Comments at 10.

14/ Avaya Comments at 6-7; Cinergy Comments at 54; Delmarva Power & Light Comments at 44.

15/ *Emerging Technologies Third Report and Order*, 8 FCC Rcd at 6591, ¶ 4. In that instance, the new spectrum user was required to (1) guarantee payment of all costs of relocating the incumbent to a comparable facility, including the costs of all engineering, equipment, site costs and FCC fees; (2) complete all activities necessary for placing the new facilities into operation, including engineering and frequency coordination; and (3) build and test the new system. *Id.* at 6591, ¶ 5.

relocation would be an expensive proposition for SMR licensees. UPCS devices cannot be retuned to operate at distant frequencies. Therefore, replacement equipment costs for the hundreds of thousands of existing UPCS users could run into the hundreds of millions of dollars. Similarly, to minimize the impact of the relocation on existing UPCS vendors, reimbursement would also be required for the $60 million that UTAM and the UPCS industry have spent in clearing over 95 percent of the fixed microwave users from the 1910 – 1930 MHz band. The high cost of UPCS relocation, coupled with the severe disruption that would occur with respect to UPCS users, makes the 1910 –1930 MHz band an unworkable choice for SMR relocation.

Even if the Commission required, consistent with its *Emerging Technologies* policy, that UPCS relocation costs be recovered, NEC and other companies operating in the 1910 – 1930 MHz band would still face significant challenges. If presented with the regulatory (e.g., new band clearing), technical (e.g., R&D testing on the new frequency) and marketing uncertainties associated with a relocation, some UPCS vendors would be forced to consider exiting the wireless PBX market altogether. 16/ A market exit by any of the current vendors would result in a significant loss of investment in a growing and promising communications technology, contrary to Congressional intent and Commission policy. 17/

16/ *See* NEC Comments in 3G Proceeding, ET Docket No. 00-258, at 16-17 (Oct. 22, 2001).

17/ *Id.*

II. Use of the 1910 – 1930 MHz Band for SMR or Other High-Powered Services Is Technically Unfeasible

The Commission should refrain from reallocating 1910 – 1930 MHz for SMR for another reason as well: such a decision would cause significant interference to adjacent band PCS licensees without providing significant benefits. 18/ Use of the 1910 – 1930 MHz band for cellular-type digital SMR or other high-powered services is technically unfeasible because it would cause interference to neighboring PCS licensees. As the comments illustrate, the 1910 – 1930 MHz UPCS band, "as allocated to low power devices that receive no interference protection, serves a necessary and critical function as a guard band to protect the integrity of licensed PCS services." 19/ A decision to introduce high-powered operations such as SMR into this "guard band" band would place adjacent band PCS operations in jeopardy.

In view of this fact, the Commission must conclude that Nextel's suggestion of pairing 5 MHz of spectrum from 1910 – 1915 MHz with 5 MHz at 1990 – 1995 MHz is unworkable because of the harmful interference that would be caused to adjacent band PCS services located below 1910 MHz. 20/ In its proposal, Nextel fails to explain how its high-powered SMR operations could co-exist side-by-side

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18/ Cinergy Comments at 53; Delmarva Power & Light Comments at 43; Entergy Comments at 47. *See also* Boeing Comments at 7 (Commission must consider the ripple effect this proceeding will have on 1910 – 1930 MHz band); UTStarcom Comments at 2 (band is not well suited for applications other than low-power, limited-area, limited-mobility UPCS).

19/ Avaya Comments at 9; *see also* UTAM Comments at 11.

20/ Avaya Comments at 9; UTAM Comments at 10-11. Commenters also note that the 700 MHz bands offer far better efficiencies for the offering of 3G services than the 1.9 GHz band. Dobson Communications Comments at 3, n.4.

with the PCS operations. The fact is that without extremely wide guard bands, which would themselves constitute an inefficient use of spectrum, high-powered use of 1910 – 1915 MHz is not possible. 21/

III. The Commission Should Promote UPCS Development and Spectrum Efficiency by Adopting the WINForum and UTStarcom Proposals

As UTAM discusses in its comments, "there are high density, geographic-specific applications in the UPCS band where sites are at full capacity . . . . A wide array of services already has been deployed, and manufacturers stand ready to provide additional services, predicated on their ability to obtain additional bandwidth." 22/ The Commission can ameliorate this location-specific band crowding and increase use of the 1910 – 1920 MHz band by approving the pending WINForum and UTStarcom petitions. 23/

The 1910 – 1920 MHz band is currently available only for asynchronous operations, which are technically unsuited for voice. Grant of the WINForum petition to permit voice-friendly isochronous operations in the 1910 – 1920 MHz band would allow "UPCS providers to better meet the needs of current users in

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21/ *See generally* NEC Comments in 3G Proceeding at 19-21 (discussing "Guide on the Results of the CITEL Study to Quantify Issues of Incompatibility Between FWA and PCS in the 1850 – 1990 MHz Band," CITEL, OEA/Ser.L/XVII6.1, Feb. 22, 2000).

22/ UTAM Comments at 12.

23/ Petition for Rule Making of the Wireless Information Networks Forum Concerning the Unlicensed Personal Communications Service, RM-9498 (Jan. 8 1999); Petition for Rulemaking of UTStarcom, Inc. Concerning the Unlicensed Personal Communications Service, RM-10024 (Nov. 6, 2000).

certain high-density environments." 24/ The ability to offer data and voice on a converged wireless platform would make wireless PBXs more attractive to potential customers, increasing the deployment of UPCS devices and promoting more efficient use of the band.

The Commission could also promote important public policy goals by granting the UTStarcom petition. Grant of the UTStarcom petition to permit low power, unlicensed limited area "community wireless networks," with minor changes to accommodate co-existence with UTAM rules, would promote the cost effective provision of wireless communications to rural areas, tribal lands and other underserved communities, without the negative consequences for other services associated with SMR use of the band. 25/ For these reasons, the Commission should grant the WINForum and UTStarcom petitions (with minor amendments), instead of reallocating the 1910 –1930 MHz band for SMR services.

IV. Conclusion

Reallocation of the 1910 – 1930 MHz band for high-powered services would be disruptive, inefficient, and technically unfeasible. Moreover, the Commission's repeated inquiries into the feasibility of such a reallocation have created considerable market confusion regarding the continued availability of the band for

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24/ UTAM Comments at 14. *See also* NEC Comments in 3G proceeding at 23-25.

25/ UTAM Comments at 16-17 (supporting UTStarcom's petition contingent upon strict compliance with current industry standards and Part 15 spectrum etiquette).

UPCS devices. 26/ Therefore, for the reasons mentioned above, the Commission should act swiftly to confirm that the 1910 – 1930 MHz band will remain allocated to UPCS and will not be used for SMR or other high-powered uses. The Commission should also promote expanded use of the band by permitting isochronous operations in 1910 – 1920 MHz and granting a modified version of the UTStarcom proposal to facilitate service in rural and underserved markets.

Respectfully submitted,

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26/ Avaya Comments at 8-9.